US6346795	Vision Battery LFP Batteries ("The accused product")
1. A discharge control circuit for controlling	The accused product comprises a discharge control (e.g., over discharging protection circuit) circuit for controlling discharge of a battery (e.g., Lithium battery) including at least one cell (e.g., Lithium battery cells).
discharge of a battery including	APPLICATIONS ~ TECHNOLOGIES ~ SERIES ~
at least one cell comprising:	LFP Lithium Series Batteries
	Vision Technology provides safe lithium iron phosphate battery solutions for motive power, telecom, energy Storage systems
	and UPS . The Iron-V series is Vision Group's latest LiFePO4 battery line. It can be widely applied to any applications that need lead-acid batteries.
	https://visionbatteryusa.com/series/lfp-lithium-series-batteries/



Case Material		AB				
Dimension (L*W*H)		25.70	9*138*213			
Weight			Kg			
Terminal Type		F1:	1 (M6)			
P Grade		/				
BCI Group NO.		22				
Cell Type-Chemistry		Pris	smatic LiFePO ₄			
BMS CHARACTERISTICS						
Primary Charging Protection		Current: 60~70A				
N. 500 W. 500 W		Delay time:15±2s				
Secondary Charging Protection	n	Current: ≥70A				
		Delay time: 3				
Primary Discharging Protection	_		t: 78~105A			
		Delay time: 15±2s				
Secondary Discharging Protection		Current: 105~170A				
		Delay time: 5±2s				
Over-charge Voltage Protection	Protection Vo		rge Voltage Protection		Voltage: ≥14.8V	
		Delay time: 5				
Over-discharge voltage protect	tion	Voltage: ≤9.	6V			
		Delay time:	≤3s			
High Temperature Protection	Chargin	g: 65±3℃	Recover: 60±3℃			
	Dischar	ging: 65±3°C	Recover: 60±3℃			
Low Temperature Protection	Chargin	ig: 0±3℃	Recover: 3±3°C			
	Dischar	ging: -20±3℃	Recover: -15±3°C			

a discharge control switch connected to the battery for cutting off a discharge current of the battery in response to a discharge stop signal; and The accused product comprises a discharge control switch connected to the battery for cutting off a discharge current (e.g., turning off switch) of the battery in response to a discharge stop signal (e.g., over discharge control signal provided by the control circuit).

Upon information and belief, the accused product utilizes a discharge control switch in its Battery Management System (BMS) to cut-off discharge current of the battery in response to a discharge stop signal provided by Cell Protection.



 $\frac{https://visionbatteryusa.com/wp-content/uploads/2020/01/Iron-V-LFP12-50EV-Spec-She-et-V3.0\%\,EF\%\,BC\%\,88DC.012.050-044\%\,EF\%\,BC\%\,89.pdf}$

Case Material	AB			
Dimension (L*W*H)			9*138*213	
Neight			Kg	
Terminal Type		F1	1 (M6)	
P Grade	/			
BCI Group NO.		22		
Cell Type-Chemistry		Pri	smatic LiFePO ₄	
BMS CHARACTERISTICS				
Primary Charging Protection		Current: 60~		
		Delay time:1	5±2s	
Secondary Charging Protection	n	Current: ≥7	0A	
		Delay time: 3	3±2s	
Primary Discharging Protection	1	Current: 78~	105A	
		Delay time:	15±2s	
Secondary Discharging Protec	ging Protection		~170A	
		Delay time: 5	5±2s	
Over-charge Voltage Protection		Voltage: ≥1	4.8V	
		Delay time:		
Over-discharge voltage protection		Voltage: ≤9.6V		
		Delay time:	≤3s	
High Temperature Protection	Chargin	g: 65±3℃	Recover: 60±3℃	
	Dischar	ging: 65±3℃	Recover: 60±3℃	
Low Temperature Protection	Charging: 0±3℃		Recover: 3±3℃	
	Discharging: -20±3℃		Recover: -15±3°C	

a control circuit connected to the battery and the discharge control switch for generating -the discharge stop signal that deactivates the discharge control switch when a voltage of at least one cell reaches a lower limit, wherein the control circuit includes a switch holding circuit for continuously supplying the discharge stop signal to the discharge control switch for a predetermined time after the discharge stop signal is generated.

The accused product comprises a control circuit connected to the battery and the discharge control switch for generating -the discharge stop signal (e.g., over discharge control signal provided by the control circuit) that deactivates the discharge control switch when a voltage of at least one cell reaches a lower limit (e.g., over discharge detection voltage), wherein the control circuit includes a switch holding circuit (e.g., delay generating circuit) for continuously supplying the discharge stop signal to the discharge control switch for a predetermined time (e.g., over-discharge delay time set by the circuit) after the discharge stop signal is generated.

Upon information and belief, the accused product utilizes a discharge control switch in its Battery Management System (BMS) to cut-off discharge current of the battery in response to a discharge stop signal provided by Cell Protection.



 $\underline{https://visionbatteryusa.com/wp-content/uploads/2020/01/Iron-V-LFP12-50EV-Spec-She-et-V3.0\%\,EF\%\,BC\%\,88DC.012.050-044\%\,EF\%\,BC\%\,89.pdf}$

Case Material	AB	S		
Dimension (L*W*H)		229	*138*213	
Veight		8.0	Kg	
Terminal Type		F11	(M6)	
P Grade		1		
BCI Group NO.		22		
Cell Type-Chemistry		Pris	smatic LiFePO ₄	
BMS CHARACTERISTICS				
Primary Charging Protection		Current: 60~	70A	
		Delay time:15	5±2s	
Secondary Charging Protection		Current: ≥70)A	
		Delay time: 3	±2s	
Primary Discharging Protection	1	Current: 78~	105A	
		Delay time: 1	5±2s	
Secondary Discharging Protection		Current: 105-	~170A	
		Delay time: 5	±2s	
Over-charge Voltage Protection		Voltage: ≥14	V8.4	
		Delay time: ≤	€3s	
Over-discharge voltage protection		Voltage: ≤9.6V		
		Delay time: ≤	€3s	
High Temperature Protection	Charging	: 65±3℃	Recover: 60±3℃	
	Discharg	ing: 65±3℃	Recover: 60±3℃	
Low Temperature Protection	Charging: 0±3℃		Recover: 3±3℃	
	Discharging: -20±3℃		Recover: -15±3°C	